Introduction

The Scope of Health Protection, Screening and Emergency Planning & Response

Health Protection is a multi-agency and multidisciplinary activity and the overall aim of Health Protection and Screening in NHS Dumfries and Galloway is to ensure that all stakeholders are involved in protecting the health of the public across the region. This includes:

- promoting high uptake of immunisation and screening programmes
- taking a proactive approach in preventing communicable and non-communicable diseases
- ensuring that effective multi agency health protection arrangements are in place to respond to individual cases and incidents
- ensuring that effective and equitable screening services are available to all residents
- monitoring the local epidemiology of relevant conditions
- ensuring that local and national authorities are sighted regarding health protection in the region.

Health Protection is a term used to encompass a set of activities within the Public Health function. It involves:

- Ensuring the safety and quality of food, water, air and the general environment
- Preventing the transmission of communicable diseases
- Managing outbreaks and the other incidents which threaten the public health

Health Protection services can have a major impact on health inequalities e.g. universal immunisation and screening; promotion of healthy environments; targeting of specific vulnerable groups e.g. persons who inject drugs and other forms of substance misuse; controlling tuberculosis.

This area, perhaps even more than other domains of public health, requires an integrated and multidisciplinary approach, with people at all levels working together to provide a coordinated service. We have shared protocols to support service delivery and in our day to day activities, we regularly work with colleagues from a wide range of organisations:

- The Acute Sector
- Independent Contractors (including GP practices, Pharmacies, Optometrists, Dental Practices)
- The Local Authority
- Scottish Water
- Animal Health/Veterinary Laboratories Agency
- Police Scotland
- Third Sector Organisations
- The Public
- Cross Border working with colleagues in the UK, Europe and internationally
In a board with a small population spread across a large geographical area, there are particular challenges. These include:

- The heterogeneous nature of the population makes it difficult to identify inequalities at an individual level
- Financial implications of delivering equitable services at the point of need
- Maintaining skills and competencies of a small workforce for all areas of work
- Maintaining good communication links across such a large area

Close partnership working is required to help build resilience and deal with some of these issues. Any future model for the delivery of health protection needs to build on these close local networks and partnerships. There is a risk that, as in other parts of the UK, over centralisation could result in gaps at local level.

**How we deliver Health Protection, Screening and Emergency Planning and Response in Dumfries and Galloway**

The health protection, immunisation and screening teams are located within the public health directorate. There are also close links with colleagues in emergency planning (Chief Executive’s team) and with the infection prevention and control team at Dumfries and Galloway Royal Infirmary. There is daily working with environmental health colleagues at the council and regular meetings with other agencies such as Scottish Water, Animal Health and the Scottish Environmental Protection Agency. Given our location on the border with England there are also close links with our equivalent organisations in Cumbria and the North West of England.

We participate fully in the national networks concerning health protection, immunisation and screening, play national roles in chairing groups such as the variant CJD Working Group and the Abdominal Aortic Aneurysm Screening IT User Group, and fulfil our national obligations regarding screening IT user acceptance testing and audit. We also have close links with other health boards, something that is likely to develop further in the future.

In 2013 a health protection and screening website – which we use to host our policies and to update colleagues in all agencies and which has received over 32,000 hits at the time of writing – went online (www.dghps.org) and in 2014 we implemented HP Zone which is a national case management system that is used to record our health protection activity and provides our clinical record. The database function of HP Zone has enabled us to produce a weekly activity summary which is sent out to a wide range of colleagues and agencies each Friday.

**Immunisation**

A child born in Scotland can expect to receive 9 injections in their first year of life and 2 oral vaccines. By the time they get to 18 years of age they will have received at least 15 separate injections (13 for boys). Throughout childhood from the age 2-11 years they receive an annual influenza vaccine. Children in certain other, well defined, high risks groups can expect to receive additional vaccines such as Hepatitis B vaccine and BCG (tuberculosis) vaccine. Adults are offered immunisations on a routine basis (for example annual influenza vaccination for those aged 65 and over and in certain risk groups; shingles vaccine for people aged 70.)
Delivery of current programmes

Childhood
The delivery of the primary immunisation programme across NHS Dumfries & Galloway uses a mixed model approach. In some areas, General Practice-employed staff administer the vaccines (40%) whilst in other areas NHS Dumfries & Galloway employed staff carry this out (60%) on behalf of the practices. Current arrangements have been in place for a long time. When the new GMS contract was introduced in 2004 existing arrangements continued, those practices who received Board support to administer vaccinations continued to do so.

With the extension of the childhood immunisation programme in 2013 to include the offer of the childhood nasal influenza vaccine to all primary school children the immunisation team expanded. The team became responsible for the delivery of the school based immunisation programme including human papillomavirus (HPV) for girls aged 11 to 13 years, tetanus, diphtheria, polio and meningococcal type C vaccine for young people aged 14 years and the childhood influenza vaccination programme.

Uptake rates across all the childhood immunisation programmes are consistently above the Scottish average. For the influenza vaccination programmes we achieved an uptake rate of 73.1% in preschool children, significantly above the Scottish average and for the school based programme 79.8% one of the highest in Scotland.

Adult
Adult immunisations are administered by General practice staff, supported by District Nurses for the administration of vaccinations for individuals who are housebound

Routine
The main systematic immunisation programme aimed at adults is the annual influenza campaign. Dumfries and Galloway has a good track record in delivering this programme and the table shows the uptake in the various groups of individuals who are offered the vaccine

<table>
<thead>
<tr>
<th>NHS Dumfries &amp; Galloway Influenza Vaccine Uptake 2014-15</th>
<th>Annual Total Dumfries &amp; Galloway</th>
<th>Scottish Average</th>
<th>D&amp;G Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 and 3 years</td>
<td>62.5%</td>
<td>50.8%</td>
<td>1</td>
</tr>
<tr>
<td>4 years</td>
<td>58.3%</td>
<td>40.6%</td>
<td>4</td>
</tr>
<tr>
<td>Over 65 years</td>
<td>78.2%</td>
<td>76.3%</td>
<td>2</td>
</tr>
<tr>
<td>All at risk (exc healthy pregnant women &amp; carers)</td>
<td>57.9%</td>
<td>54%</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Respiratory Disease</td>
<td>57.6%</td>
<td>52.6%</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Heart Disease</td>
<td>60.3%</td>
<td>56.7%</td>
<td>2</td>
</tr>
<tr>
<td>Chronic Renal Disease</td>
<td>64.4%</td>
<td>62.6%</td>
<td>3</td>
</tr>
<tr>
<td>Chronic Liver Disease</td>
<td>46.1%</td>
<td>47.4%</td>
<td>9</td>
</tr>
<tr>
<td>Chronic Neurological Disease (including Stroke/TIA, Cerebral Palsy, MS)</td>
<td>52.6%</td>
<td>53.7%</td>
<td>12</td>
</tr>
<tr>
<td>Diabetes</td>
<td>70.7%</td>
<td>67.2%</td>
<td>3</td>
</tr>
<tr>
<td>Immunosupression (exc. Asplenia)</td>
<td>69.5%</td>
<td>65.2%</td>
<td>1</td>
</tr>
<tr>
<td>Asplenia or dysfunction of the spleen</td>
<td>48.2%</td>
<td>46.2%</td>
<td>4</td>
</tr>
<tr>
<td>Pregnant and not in a clinical risk group</td>
<td>51.7%</td>
<td>49.5%</td>
<td>5</td>
</tr>
</tbody>
</table>
One area where NHS Dumfries and Galloway does not perform as well is in influenza immunisation in pregnant women who are in a clinical risk group (for example pregnant women with severe asthma). Another is in achieving good uptake in people with chronic liver disease and chronic neurological disease. We are addressing these issues through the relevant Managed Clinical Networks.

Older people, aged 70 are now offered an immunisation against shingles (Herpes zoster). This is carried out through general practice and last year achieved an uptake of 58.2% compared to 57.2% in Scotland as a whole. The vaccination programme also features an ongoing catch up programme to individuals aged 78 and 79 years. Last year practices achieved uptake rates of 57.3% (53% Scotland) and 55.2% (53.4%) respectively.

**Travel**
The Health Protection Team is able to offer advice regarding travel health to members of the public and health professionals. Immunisations that are recommended are administered through general practice. Advice is also available on our website at [http://www.dghps.org/immunisation-and-travel/](http://www.dghps.org/immunisation-and-travel/). Discussions are underway with one of the larger practices in the region that has an interest in travel health about how we can work more closely in future.

**Horizon scanning and implementation of possible future programmes**
In a very welcome move, it was announced that from this autumn, the new Meningococcal B immunisation was to be made available to babies. The programme is just starting at the time of writing. The vaccine is offered to babies at two, four and 12 months of age as part of the routine Childhood Immunisation programme. Babies aged three and four months at the start of the programme are also being offered the vaccine as part of a “catch-up” programme. Babies over the age of four months at the time of introduction will not be offered the vaccine unless they are at increased risk of infection.

In response to an increased number of cases of meningitis (infection of the lining of the brain) and septicaemia (blood poisoning) due to Group W meningococcus that have been seen in England (up from 22 cases in 2009 to 117 in 2014) a vaccine protecting against the A, C, W and Y strains of meningococcus has been introduced for one year. All 14-18 year olds are offered the Men ACWY vaccine as part of the routine NHS vaccination programme and the new vaccine replaces the existing teenage Men C vaccine.

As described above, the nasal influenza vaccination programme was introduced in 2014 and was a great success in Dumfries and Galloway. It is possible that in future the programme may be extended to secondary schools and we are monitoring the situation closely.
Screening

Cancer Screening

Bowel Cancer Screening
People aged 50 to 74 are offered a bowel cancer screening test every two years. The test uses a postal system whereby small amounts of faeces are applied to a card which is sealed up and examined in a laboratory based in Dundee at King’s Cross Hospital for traces of blood. Once people have returned the test, the Bowel Screening Centre sends the result within two weeks. Most people will have a negative result, which means that no blood was found in the samples. If the result shows that blood has been found in the samples, the person is contacted by a health professional and offered a colonoscopy. This test, which is carried out locally, requires an out-patient appointment where the bowel is examined using a flexible tube with a camera.

The latest available uptake figures for the bowel cancer screening programme in the region are 59.7% compared with a Scottish average of 56.1%.

FIT Test
In Scotland, over the next two years, a new test will be introduced. The Faecal Immunochemical Test (FIT) also looks for hidden blood but it is a better test which should pick up more cancers and have fewer false positive results. Unlike the current method, it also only requires one sample and it is hoped that this will improve uptake. There is some evidence that men and people from more deprived groups (who are less likely to use the current kit) may be more likely to take part with the new test.

Breast Cancer Screening
In Dumfries and Galloway, women aged 50 to 70 years are offered a three yearly mammogram. The programme is organised on a South-West Scotland basis and is run from the specialist centre at Ayrshire Central Hospital in Irvine. The service is delivered in Dumfries and Galloway using mobile units and women who require further investigations are assessed at the main unit in Irvine.

This is a considerable distance to travel at a potentially stressful time. The situation was not helped when in November 2012 patient transport services for women from NHS Dumfries & Galloway attending a review clinic at Ayrshire Central Hospital were withdrawn. This has led to significant problems for some women accessing this essential part of the screening programme. Numerous alternative avenues have been explored, but a solution has not been found. Some women have simply failed to attend for follow-up. Others have sought help from the GP who has referred them to the breast clinic at Dumfries & Galloway Royal Infirmary for further evaluation. This has placed a burden on the already busy local symptomatic clinic.

The most recent report that was presented to the Board was in September 2014 and covered the 2013 screening round in Dumfries and Galloway. Eligible women from 5 practices in Dumfries & Galloway were invited for routine breast screening examination with mobile units located at 2 sites (Dumfries and Sanquhar). In all, 4,800 women in Dumfries & Galloway received invitations and of these 3,595 attended. This gives an uptake of 74.8%. Also, 240 women self referred during the period (5.3% of those screened). The latest three year average uptake rate for Dumfries and Galloway is 77.5% against a Scottish figure of 72.9%.
Cervical Cancer Screening

In Dumfries and Galloway, the uptake rate for cervical screening is 80%. The programme continues to perform well and a further audit to demonstrate that all the fail-safe mechanisms in place are working well will be included in future work programmes. Dumfries and Galloway is participating in a new national audit of invasive cervical cancers and this involves close work with clinical and laboratory colleagues.

From 2015, the age range will change from 20 – 60 years to 25 – 65 years for routine screening. This will bring Scotland in line with the rest of the UK. Women between the ages of 50 and 65 will only be required to be screened every 5 years if on normal routine recall. Women over 50 with negative histories are seen to be at low risk to cervical cancer. Roll out is expected in April 2016.

Women in the younger age group have the highest defaulter rate. HPV is a common transient infection in young women but with the HPV vaccination now routinely being given in secondary schools, these young women are now entering the Cervical Screening Programme. The recall system now has the facility to identify those women who have a full HPV immunisation status. Women currently being called in the 20 – 25 age range will still continue to be called according to their recall advice. From 2015 no women will be called until their 25th birthday but women currently within the current pathway will continue to be called.

Work is also underway to introduce HPV as first line of testing but this will not be introduced until after the age range and frequency changes have been place. Local clinical colleagues have been carrying out a clinical study that will help to inform this debate.

Board Summary as at 1 January 2015

<table>
<thead>
<tr>
<th>NHS Dumfries &amp; Galloway Board</th>
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<tbody>
<tr>
<td>No. Practices</td>
</tr>
<tr>
<td>List Size</td>
</tr>
<tr>
<td>Excluded Women</td>
</tr>
<tr>
<td>Pregnant</td>
</tr>
<tr>
<td>Co-Morbidity</td>
</tr>
<tr>
<td>Not Clinically Appropriate</td>
</tr>
<tr>
<td>Terminally ill</td>
</tr>
<tr>
<td>Anatomically Impossible</td>
</tr>
<tr>
<td>No Cervix</td>
</tr>
<tr>
<td>No Further Recall</td>
</tr>
<tr>
<td>Opted Out</td>
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<tr>
<td>Suspended</td>
</tr>
<tr>
<td>Defaulter</td>
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<tr>
<td>Transferred out by SCCRS</td>
</tr>
<tr>
<td>Eligible Women</td>
</tr>
<tr>
<td>Adequately Smeared Eligible Women</td>
</tr>
<tr>
<td>Overall Achievement Rate %</td>
</tr>
<tr>
<td>List Size excluding No Cervix</td>
</tr>
<tr>
<td>Recalculated Adequately Smeared Eligible Women</td>
</tr>
<tr>
<td>Overall Achievement Rate (excluding No Cervix) %</td>
</tr>
</tbody>
</table>

Total Adequately Smeared Excluded Women 1798
Total Adequately Smeared Women with a No Cervix Exclusion 175
Screening for Conditions other than Cancer

Abdominal Aortic Aneurysm Screening
The aorta is the main artery that supplies blood to the body. It runs from the heart down through the chest and abdomen. As we get older the wall of the aorta in the abdomen can become weak and balloon out to form an aneurysm. This is called an abdominal aortic aneurysm. All men aged 65 in Scotland are invited to attend a one-off AAA screening test. This is done by ultrasound in DGRI and community clinics throughout the region. It has been estimated that about one in every 20 men aged 65 in Scotland has an abdominal aortic aneurysm. The uptake rate in the region has been 87.3% against a Scottish figure of 85.9%.

This is a relatively new programme, and across the UK, fewer aneurysms have been detected than had been expected. Discussions are going on at a national level about the future development of the programme. It currently offers screening to men only because figures suggested that men were at six times the risk of ruptured aortic aneurysm than women but this may be reviewed in the future.

Performance of the Diabetic Retinopathy Screening Programme 2013/14
People with diabetes have a risk of developing retinal damage over time and it is important that these changes are detected early so that appropriate treatment can be given to protect vision. People aged 12 years and over with diabetes in the region are offered an annual retinal examination to detect any changes.

Uptake and Key Performance Indicators
The number of people validated for screening for diabetic retinopathy was 9091 with an eligible population of 7,793 and the uptake was 90.0% in 2013/14. This high uptake surpasses all Scottish NHS Boards by some distance. The programme was completed on schedule by 31st March 2014 and all patients received their result letter within the 20 working day target.

A normative 2.6% of the people screened were referred to Ophthalmology, the proportion examined by slit-lamp was 1.2%, one of the lowest in Scotland. The proportion of the screened population in D&G in whom mild retinopathy is detected has reduced from 41.4% (2012) to 36.6% (2014).

NHS Dumfries and Galloway DRS programme participate in the national quality assurance (EQA) grading scheme, every six months. The objective is to establish an EQA programme in collaboration with the four nations working group to ensure that individual screening programmers’ achieve the National Screening Programme objectives. The Scottish Diabetic Retinopathy Screening (DRS) collaborative work in partnership with Aberdeen University, who developed the software.

Conclusion
The DRSP has been highly successful in achieving a 90.0% uptake of eligible diabetic population in 2013/14. National monitoring of the programme is in place. The service is designed to be easily accessible and patient-friendly. The consumer satisfaction survey indicates that these aims have been achieved in 2012 and 2014.

Pregnancy and Newborn Screening
In May 2015 the UK National Screening Committee announced its recommendation to screen every newborn baby in the UK for an additional four genetic disorders:
• Homocysteinuria (HCU)
• Maple Syrup Urine Disease (MSUD)
• Glutaric aciduria type 1 (GA1)
• Isovaleric acidaemia (IVA).

Full implementation of this policy change is being implemented in England by January 2015. NHS Scotland's ability to implement this will depend on the changes to National Immunisation System (SIRS) currently being approved and implemented. Scottish Government, Health Protection Screening Programmes Directorate, and NHS Boards are supportive of this change.

Locally, a new Pregnancy and Newborn Screening Steering Group has been formed in 2014/15 due to changes in personnel and this new group will be responsible for collection of a variety of data which is required to be submitted nationally.

Health Protection

Infections

Serious / Significant Infections

Graphs to show number of Infectious Disease cases in Dumfries & Galloway:

2014

![Bar chart showing infectious disease cases for 2014]

2015 (up to 30th September)
**E coli O157**
Scotland has the highest rate of E coli O157 within the UK. Within Scotland we are one of the Boards with the highest rates. Scientific studies have shown that the primary host for E coli is cows and human infection is incidental. Living in a rural area characterised by cattle farming is associated with a higher risk of infection.

There is a focus within the Health Protection Team on working proactively with partner agencies to raise awareness of the risk and to promote strategies to reduce it. Team members have attended various agricultural shows over the summer in order to raise awareness among farming communities.

**Non E coli Gastroenteritis**
The numbers of non E coli enteric infections are reasonably constant and although rarely serious create considerable workload for the Health Protection Team, Microbiology and Environmental Standards. They also cause anxiety for individuals and their families from worry about health and practical issues relating to work and education.

**Meningococcal Infections**
*Neisseria meningitidis* (also known as meningococcus) is a bacterium and although infection is uncommon it can be very serious. It can cause meningitis and/or septicaemia. Anyone who suspects meningitis or septicaemia should seek medical help immediately.

- **Meningitis** is an inflammation of the lining that covers the brain and spinal cord (the meninges). Bacterial or viral infection is the usual cause. Bacterial meningitis is uncommon but serious. Viral meningitis is a fairly common condition but much less serious than a bacterial cause.
- **Septicaemia** is an infection of the blood with bacteria. It is often called 'blood poisoning'. If bacteria multiply and release poisons (toxins) into the blood it can cause serious illness.

Each year in Dumfries and Galloway, the health protection team deals with the public health management of several cases of meningococcal infection. This includes careful contact tracing and
the recommendation of prophylactic antibiotics for close contacts. There are several types of meningococcus (most commonly B and C in the UK, but also A, W and Y) and in certain circumstances a vaccination will also be offered. Close liaison is often required with colleagues in education if the case is a pupil or student.

As referred to above, babies are now routinely immunised against type B and C meningococcus and there is a campaign underway this year to offer group ACWY vaccine to young people going to university.

**Tuberculosis**

Human tuberculosis is caused by infection with bacteria of the *Mycobacterium tuberculosis* complex (M. tuberculosis, M. bovis, M. africanum, M. microti and M. canetti). Whilst MTB commonly causes infection of the lungs (60%), it can involve any organ in the body. Early symptoms of active disease can include weight loss, fever, night sweats, loss of appetite as well as symptoms from the specific organ or system that is infected; for example an enlarged lymph node or bone pain if the bacteria have invaded the bones.

Almost all UK cases of TB are acquired via the respiratory route by breathing infected respiratory droplets from a patient with infectious respiratory TB. Transmission is much more likely if the index case has sputum which is smear positive for the bacillus on microscopy, and often after prolonged contact such as living in the same household.

- D&G has a TB rate of 3.4 cases per 100,000 population. The rate has consistently remained below the WHO target of less than 10 cases per 100,000
- D&G had 5 reported cases in 2014; 4 pulmonary and 1 non pulmonary
- 100% of cases notified in 2013 completed treatment within 12 months.
- There have been no outbreaks of TB during 2014
- Contact tracing identified zero cases of active TB disease and zero cases of latent infection
- 91% uptake rate of BCG vaccination in referred neonates

More detail is available in the Tuberculosis Annual Report.

**Common but less serious conditions**

**Campylobacter**

We see many cases of campylobacter gastroenteritis each year in Dumfries and Galloway. It is a very common bacterial gastroenteritis and many cases are related to the consumption of under cooked chicken or other poultry, or to cross contamination in the kitchen. All opportunities are taken by ourselves and our colleagues in Environmental Health at the council to promote food hygiene, particularly during “barbecue season” and at Christmas.
**Norovirus type infections**
This is a common infection, and sometimes causes outbreaks in hospitals (which are dealt with primarily by colleagues in the Infection Control Team) and care homes. In 2014-15 there were 5 confirmed and 9 suspected norovirus infections in local care homes. All received full support from the health protection team and there is a regular programme of training in place. Particularly intensive support is given to homes that have experienced multiple outbreaks.

**Salmonella**
There were 21 cases of salmonella infection that we were made aware of in 2014-15. All were carefully investigated in conjunction with environmental health colleagues and appropriate public health control measures (including exclusion from work where necessary) were implemented.

**Influenza**
Seasonal Influenza is a highly infectious disease caused by a virus. It occurs every year, usually in winter, and can make even healthy people feel very unwell. Infection usually lasts for about a week and is characterised by sudden onset of high fever, aching muscles, headache and severe malaise, non productive cough, sore throat and rhinitis. In the young, the elderly or those with other serious medical conditions influenza can bring on pneumonia, or other serious complications which can, in extreme cases, result in death.

Influenza has an annual attack rate estimated at 5%-10% in adults and 20%-30% in children.

The most effective way to prevent the disease and/or severe complications is vaccination. Safe and effective vaccines have been used for over 60 years. Influenza immunisation has been recommended in the UK since the late 1960’s, with the aim of protecting those in clinical risk groups who are at a higher risk of influenza associated morbidity and mortality. In 2000, the policy was extended to include all people aged 65 years or over. In 2010, pregnancy was added as a clinical risk group for routine influenza immunisation. In 2013 children aged two to three years were included in the routine programme and pilots were undertaken in some primary schools. In 2014 preschool children aged two years and above and all primary school children were included in the programme in Scotland.

In Dumfries & Galloway in 2014/15 two care home outbreaks of influenza like illness were reported and one acute hospital outbreak, compared to nil in 2013/14. The management of outbreaks and recommendations have been detailed in individual outbreak reports, one of the key
recommendations highlighted was to reiterate the importance of sampling and antiviral medication to relevant clinicians prior to the 2015/16 season commencing.

**Blood Borne Virus Work**

**Needle Exchange (Injecting Equipment Provision)**
Providing access to clean injecting equipment is an important harm reduction measure and in the region there are 11 pharmacies that provide cover from Stranraer in the West through to Gretna in the East. In addition, there is one fixed site in Stranraer. There is a mobile Outreach Worker who provides the IEP service covering from Dalbeattie through the whole of the East of the region. The outreach worker provides the majority of the IEP service for D&G.

The hope is that a further IEP service will be available within Stranraer from April 2016 when the Alcohol and Drugs Partnership renews the drug service contract.

Clients using the IEP services can be referred onwards or directed to other services as appropriate, including GPs, specialist alcohol and drug services, the clinical blood borne virus (BBV) team, social work, and also to the BBV specialist nurse who can provide BBV testing and Hepatitis B vaccination as required.

**Case Finding**
The Scottish Government’s updated Sexual health and Blood Borne Virus Framework for 2015 - 2020, highlights the continuing need for more testing to be carried out across Scotland as there are still thought to be many Hepatitis C cases who are undiagnosed. With this in mind the push over the next few years will be to make testing easily available to clients, and to highlight to other services the importance of offering BBV testing to those who, on assessment, may have been, or still are at risk of BBV infection.

**Vulnerable Groups**
Many people affected by BBVs are vulnerable and have multiple needs. This is where partner agencies are able to help in identifying these vulnerable people. The key issues are homelessness, addiction, alcohol use and offending, but more recently, other factors have emerged such as New Psychoactive Substances (NPS) the influence of social media and technology. Further work needs to be carried out with partner agencies, to assess how best we can identify these vulnerable people and allow easy access to testing and treatment.

**Education and Training**
The BBV specialist nurses regularly offer training and education to colleagues within the NHS and also to agencies outwith the NHS. This training/education is tailored to meet the requirements of the service and/or the clients who are attending and evaluates well.

**Managed Clinical Network**
The Managed Clinical Network (MCN) is a multidisciplinary group that includes membership from NHS Dumfries and Galloway, primary care, the prison and importantly third sector groups such as the Terrence Higgins Trust. It is held quarterly and oversees work aimed at detecting, treating and educating people about blood borne viruses.
Outbreaks
An outbreak is defined as a larger than expected number of cases of a particular infection that are linked (for example members of the same family, customers at a restaurant, guests at a hotel). It is important to investigate outbreaks as soon as possible so that any public health actions needed to prevent ongoing risk are put in place quickly.

The roles and responsibilities of the various agencies are explained in the Major Outbreak Plan (http://www.dghps.org/app/download/6400316/1.01_Major_Outbreak_Plan_2012.pdf), which is regularly reviewed and exercised. Recent exercises include the Silver Swan exercises looking at pandemic influenza as well as local activation exercises.

National and International incidents can also have local implications. Recently we have dealt with the public health management of people returning from Ebola-affected parts of Africa and with possible cases and contacts of MERS CoV (Middle Eastern Respiratory Syndrome Coronavirus).

Training and Exercising
Fortunately, it is unusual to experience major outbreaks or other public health incidents in the region, which makes exercising and planning even more important. Recently we have been running training sessions regarding potential chemical events that would involve the running of a Scientific and Technical Advice Cell (STAC). In Exercise “Vapour Trail”, scenarios so far have included a crash involving a chemical tanker and severe weather. We held a tabletop exercise looking at the management of a potential Ebola Case (Exercise “Leo”) and have participated in the national pandemic flu exercises (Exercise “Silver Swan”).

In conjunction with colleagues from Borders, Cumbria and the North East of England, we organised and participated in a cross border exercise (Exercise “Border Beat”) in May 2015 which examined the implications of an anthrax-related incident with cases and affected premises distributed on both sides of the England-Scotland border and in different local authorities and NHS areas. An outcome has been that we now attend a regular Cross Border Forum with colleagues from other agencies and areas.

Care Homes
By their nature, care homes are prone to outbreaks of infectious disease. The majority of our outbreaks do occur in these settings, and are principally viral gastroenteritis (norovirus or similar) and influenza or flu-like illnesses.

We hold regular training events in order to ensure that staff and management are aware of good hygiene practices and how to respond to a potential outbreak. When informed of a suspected outbreak, full support is given in the form of daily telephone contact. Where necessary (for example if an outbreak appears not to be subsiding as expected, or if a home has experienced a number of incidents) then a member of health protection staff will visit. Our norovirus packs are sent out to care homes and the printed material is available on the care homes section of our website.
Incidents
Aside from the care-home related outbreaks of gastroenteritis and influenza/flu like illness described above, we have managed a number of incidents recently. These are the subject of other reports, and the main incident was a failure in disinfection to the water supply serving the Crichton estate.

Conclusions and Recommendations
This annual report has given a high level overview of the activities that take place in the fields of health protection and screening in Dumfries and Galloway. The following recommendations are made:

- Efforts should be made to improve uptake rates for influenza immunisations in all clinical risk groups but in particular liver disease, neurological disease and pregnant women.
- We should work towards a more proactive ethos in communicable disease control in order to reduce the number of cases, particularly of gastrointestinal infection. In particular:
  - We recommend the development of a multiagency approach to communicating and reducing risks.
  - We recommend continued involvement in the national work streams relating to this area.
- We should develop a more multidisciplinary approach to TB management through the cohort review in collaboration with Ayrshire & Arran Health Board.
- We should develop robust protocols for testing and antiviral use during influenza outbreaks in closed settings such as care homes.
- We should engage with the health and social care integration agenda, particularly in relation to blood borne virus and TB work.
- Debriefs and “lessons learned” sessions should be introduced following outbreaks in care homes.
- An action plan for care home training should be developed to build on the lessons from the training needs analysis that was undertaken.
- We should continue to develop strong cross border links and robust arrangements for management of cross border incidents.